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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,289	08/27/2003	Allan J. Wildey	900260.90200	5484

26710 7590 12/02/2005

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EXAMINER	
MANCHO, RONNIE M	
ART UNIT	**PAPER NUMBER**
3663	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/649,289	ALLA J. WILDEY	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 2-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 2-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zulu (6039133) in view of Brandt et al (6863144)

Regarding claim 2, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein the setting of said sensitivity selector is determined directly by an operator.

However, Brandt et al (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10) disclose a steering system for a work vehicle including a sensitivity selector communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined directly by an operator.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Brandt et for the purpose of varying steering modes of operation in different working conditions.

Regarding claim 3, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the operator may set the sensitivity selector to either of at least two different settings, one of which causes the processor to produces more steering response for a given input from the steering input device than the other.

Regarding claim 4, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein the setting of said sensitivity selector is determined by what gear the vehicle is in.

However, Brandt et al (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10) disclose a steering system for a work vehicle including a sensitivity selector communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined by what gear the vehicle is in.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Brandt et for the purpose of varying steering modes of operation in different working conditions.

Regarding claim 5, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the setting of the sensitivity selector determines the rate at which articulation takes place in response to a given operator input to the steering input device.

Regarding claim 6, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the setting of the sensitivity selector determines the magnitude of articulation that takes place in response to a given operator input to the steering input device.

Regarding claim 7, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the setting of the sensitivity selector determines the rate of change of articulation and the magnitude of articulation that takes place in response to a given operator input to the steering input device.

Regarding claim 8, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the steering input device is an electronic joystick.

Regarding claim 9, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the steering input device is an electronic steering wheel.

Regarding claim 10, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, further comprising a positional feedback sensor, communicatively connected to the processor, for measuring an articulation angle between the first frame and the second frame and communicating the articulation angle to the microprocessor.

Regarding claim 11, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 10, wherein the processor controls the valve to articulate the first frame and the second frame into an aligned position when the steering input device is placed in a center position.

Regarding claim 12, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, further comprising an operator input device communicatively connected to the processor for allowing an operator to input a tire size.

Regarding claim 13, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 12, wherein the processor determines a maximum articulation angle between the first frame and the second frame based on the tire size input by the operator.

Regarding claim 14, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 13, wherein the processor controls the valve to prevent articulation of the first frame and the second frame past the maximum articulation angle.

Regarding claim 15, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 14, wherein the processor controls the valve to slow down articulation as the maximum articulation angle is approached.

Regarding claim 16, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 2, wherein the processor controls the rate of displacement of the valve.

Regarding claim 17, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 16, wherein the processor controls the valve so as to gradually start and stop articulation.

Regarding claim 18, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second (14, fig. 1) frame pivotally connected to the first frame12 by a pivot joint 13;

c) at least one hydraulic cylinder (15, 16, fig. 1), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-67);

f) a processor 48 (col. 5, lines 47-67) communicatively connected to the proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) and to the steering input device 56 to control the valve in response to inputs from the steering input device;

g) wherein the processor 48 controls the valve to align axes of the first frame 12 and the second frame 14 to be generally parallel from a generally non-parallel position when the steering input device is returned to a center position.

Regarding claim 19, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second frame 14 pivotally connected to the first frame by a pivot joint;

c) at least one hydraulic cylinder (15, 16), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering 56 input device; f) an input device for an operator to input tire size;

g) a processor 48 communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; h) wherein the processor controls the valve so as not to exceed a maximum articulation angle between the first and second frames which the processor sets based on the tire size input by the operator (columns 5-8).

Regarding claim 20, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second 14 frame pivotally connected to the first frame by a pivot joint 13;

c) at least one hydraulic cylinder (15, 15), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56;

f) a processor48 ;

g) an interface 57 (fig. 2; col. 5, lines 17-20) operatively connecting the steering input device to the processor 48;

h) wherein the processor 48 operates the proportional solenoid valve in response to inputs from the steering input device (col. 5, lines 47-67);

i) wherein 57 the interface is the same for different types of steering input devices.

Regarding claim 21, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second frame 14 pivotally connected to the first frame 12 by a pivot joint 13;

c) at least one hydraulic cylinder (15, 16), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid steering valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) at least one other solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) to control at least one other function;

f) a source of pressurized hydraulic fluid which supplies hydraulic fluid under pressure to both of said valves (columns. 5&6);

g) an operator controlled steering input device 56; and

h) a processor 48 communicatively connected to the steering valve and to the steering input device to control the steering valve in response to inputs from the steering input device, and communicatively connected to the other solenoid valve to control it (col. 5&6);

i) wherein the processor 48 gives priority of flow from the source of hydraulic fluid to the steering valve (col. 5&6).

Regarding claim 22, Zulu (abstract, figs. 1&2) discloses the steering system of claim 2, wherein the valve is a four-way, three-position hydraulic valve.

Response to Arguments

4. Applicant's arguments with respect to claim 2-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho
Examiner
Art Unit 3663

11/27/05

JACK KEITH
SUPERVISORY PATENT EXAMINER